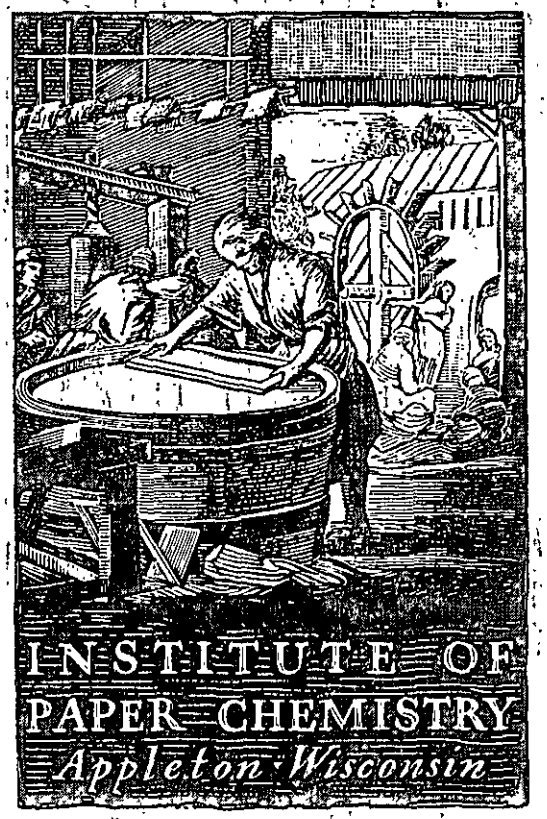


CONTINUOUS BASELINE STUDY

Project 1108-13

Progress Report 125

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

December 1, 1957

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS BASELINE STUDY

Project 1108-13

Progress Report 125

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

December 1, 1957

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

In conjunction with the F.K.I. Continuous Baseline Study, The Institute of Paper Chemistry has been directed to identify the participating mills by means of a scrambled system of code letters. Under this system, which was initiated in Progress Report 105, each mill is identified by a code letter different from that used for the previous month.

During the month of November, seventy-five different sample lots of 42-lb. Fourdrinier kraft linerboard from fourteen different F.K.I. mills were processed at The Institute of Paper Chemistry. A tabulation of the number of samples classified according to mill may be seen in Table I.

TABLE I

DISTRIBUTION OF 42-LB. LINERBOARD SAMPLES

Mill Code	Samples Submitted
A	0
B	5
C	2
D	3
E	0
F	0
G	2
H	9
I	8
J	0
K	2
L	13
M	6
N	8
O	3
P	4
Q	2
S	8
Total	75

These sample lots were tested for basis weight, caliper, bursting strength, and Elmendorf tear. The average strength results for each mill may be seen in Table II and are graphically presented in Figures 1 to 5. In addition to a comparison of the mill averages for the various tests, Table II also shows the current F.K.I. averages, the cumulative F.K.I. averages, and the F.K.I. indexes. The cumulative F.K.I. averages is based on the results for the previous twelve months excluding the current period. Hence, in the case of the current report, it covers the period from November 1, 1956 to October 31, 1957. The F.K.I. indexes are obtained as follows:

$$\frac{\text{current F.K.I. average}}{\text{cumulative F.K.I. average}} \times 100 = \text{F.K.I. index (\%)}$$

The F.K.I. index provides a ready means of comparing the current quality with previous results. For example, the current F.K.I. average basis weight is 43.2 lb., and the cumulative F.K.I. average basis weight is 43.0 lb. Hence, the F.K.I. index for basis weight determined in per cent as indicated above is 100.5% and signifies that the current average basis weight is slightly higher than the cumulative average.

A comparison of the results in Table II and Figure 1 shows that the average basis weight results for all mills conform to the 42-lb. specification set forth in Rule 41. Mills C and H shared the highest average basis weight, which was 43.9 lb. or approximately 4.5% higher than the 42-lb. specification. Mill K had the lowest average basis weight of 42.3 lb., which was approximately 0.7% higher than the 42-lb. specification.

The amount by which the mills vary from the 42-lb. specification is as follows:

Mill Code	Per Cent
A	--
B	+3.6
C	+4.5
D	+1.7
E	--
F	--
G	+2.9
H	+4.5
I	+1.9
J	--
K	+0.7
L	+3.8
M	+3.3
N	+2.4
O	+3.3
P	+3.3
Q	+1.0
S	+2.4

A comparison of the average basis weight data for the previous period with the current F.K.I. average indicated that the basis weight results have increased slightly from 43.0 lb. to 43.2 lb.

A comparison of the average caliper values for the various mills (see Figure 2) shows that the mill averages varied from a low of 12.1 points for Mills L and S to a high of 13.8 points for Mill C. The current F.K.I. average is 12.9 points, slightly higher than the cumulative F.K.I. average of 12.7 points, as indicated by the F.K.I. index of 101.6%.

The average bursting strength values obtained for each mill are graphically presented in Figure 3. It may be observed in Table II

and Figure 3 that the average bursting strength values for the various mills range from a low of 104 for Mill K to a high of 118 for Mill D. The current F.K.I. average bursting strength is 112 p.s.i. g., slightly higher than the cumulative F.K.I. average of 111 p.s.i. g. as indicated by the F.K.I. index of 100.9%.

A graphic comparison of the Elmendorf tear results for the various mills is given in Figures 4 and 5. The data of Table II show that Mills L had the highest average machine direction tear value of 370 g./sheet, and that Mill N had the lowest value of 281 g./sheet. It may be further noted in Table II that Mill L had the highest cross-machine direction tear value of 410 g./sheet and that Mill N had the lowest value of 335 g./sheet. It may be noted further that the current F.K.I. machine and cross-machine direction tear averages are slightly lower than their respective cumulative F.K.I. averages.

A comparison of the F.K.I. index indicates that, for the current period, the current F.K.I. averages for basis weight, caliper, and bursting strength are slightly higher than the corresponding cumulative F.K.I. averages, whereas the current F.K.I. averages for machine and cross-machine direction Elmendorf tear are slightly lower than the cumulative F.K.I. averages.

In order to compare the variation within a given mill, the test results for each particular mill have been tabulated in Tables III to XX for Mills A and S, respectively.

The results obtained on special drum stock are presented in Table XXI.

In addition to the current and cumulative average, the mill factor and mill index are given for each mill. The cumulative mill average is the average test result obtained on the samples submitted by the particular mill for the previous twelve months excluding the current period. The mill factor and the mill index are obtained as follows:

$$\frac{\text{current mill average}}{\text{cumulative mill average}} \times 100 = \text{mill factor (\%)}$$

$$\frac{\text{current mill average}}{\text{cumulative F.K.I. average}} \times 100 = \text{mill index (\%)}$$

The mill factor and the mill index are a convenient means for comparing the current mill results either with the previous results for that particular mill or with the cumulative F.K.I. results. The reports also present a comparison of the test data obtained at the mills with test data obtained at The Institute of Paper Chemistry. These test data are presented and discussed on subsequent pages of this report.

It may be noted in Tables III through XXI that the test data include information about the sheet finish. The summarized results for the mills which submitted sample lots during the current period are as follows:

Mill Code	No. of Sample Lots W.F.	D.F.	Misc.
A	No samples submitted		
B	5		
C	2[a]		
D	3[a]		
E	No samples submitted		

(Continued on following page)

Mill Code	No. of Sample Lots W.F.	D.F.	Misc.
F	No samples submitted.		
G	2[a]		
H	9		
I	8		
J	No samples submitted.		
K	2[a]		
L	13		
M	6		
N	8		
O	3		
P	4		
Q	2		
S	8		
R[b]	No samples submitted.		

[a] One side only.
[b] Drum linerboard.

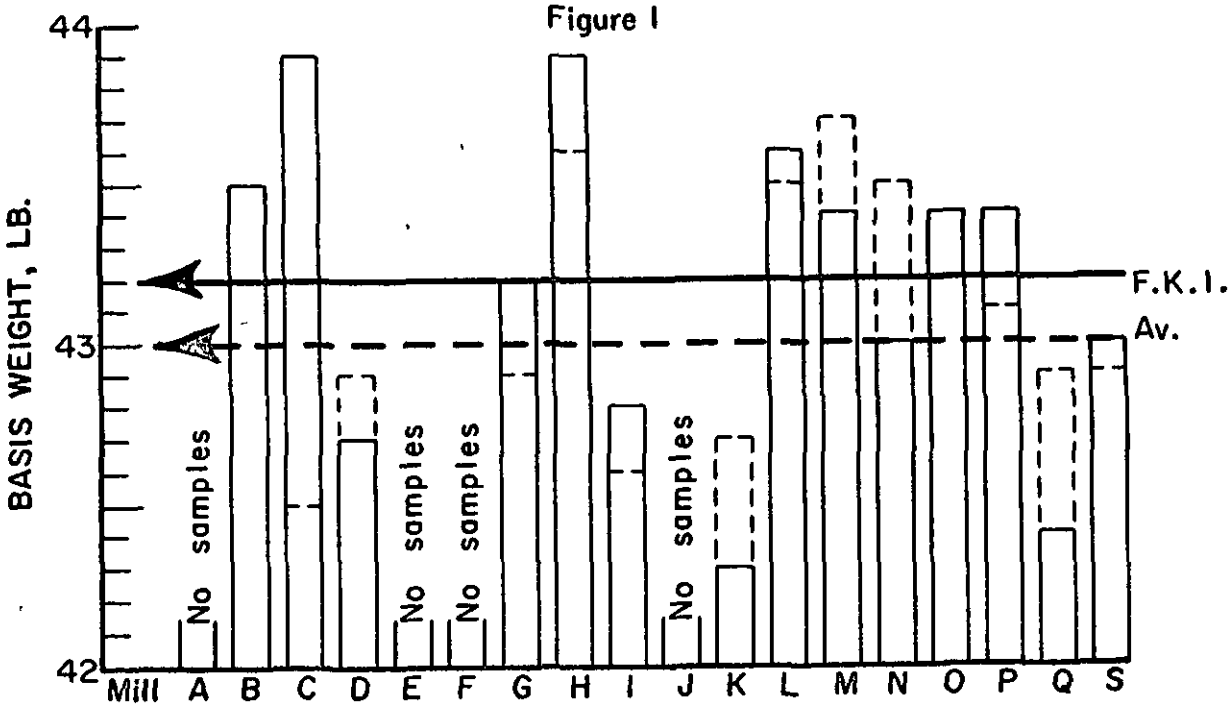
The results indicate that all participating mills are using a water finish on their 42-lb. linerboard.

TABLE II

SUMMARY OF COMPOSITE MILL AVERAGES--NOVEMBER 1 THROUGH NOVEMBER 30, 1957

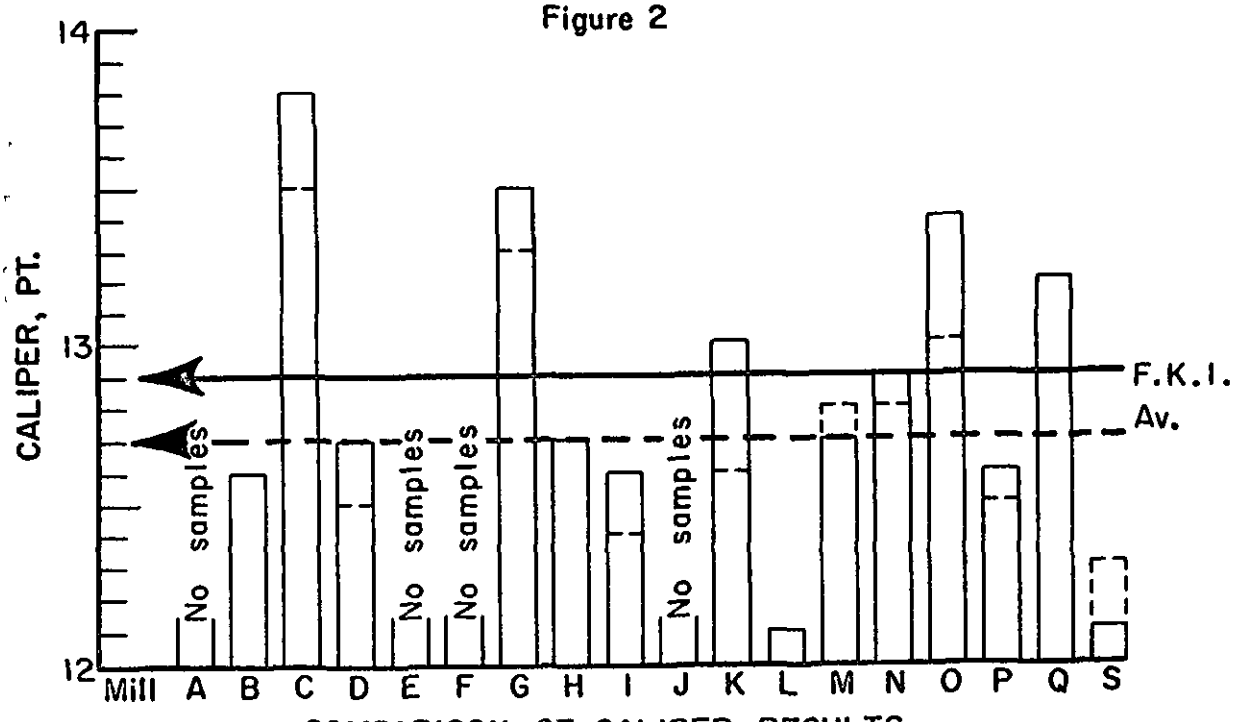
Mill	Basis Weight, lb.	Caliper, points	Bursting Strength, p.s.i. gage	Elmendorf Tear, g./sheet	
				In Machine	Cross Machine
A	No samples submitted.				
B	43.5	12.6	116	325	374
C	43.9	13.8	115	328	375
D	42.7	12.7	118	295	388
E	No samples submitted.				
F	No samples submitted.				
G	43.2	13.5	111	315	361
H	43.9	12.7	113	338	381
I	42.8	12.6	112	299	349
J	No samples submitted.				
K	42.3	13.0	104	313	354
L	43.6	12.1	112	370	410
M	43.4	12.7	113	347	379
N	43.0	12.9	108	281	335
O	43.4	13.4	105	364	381
P	43.4	12.6	114	343	376
Q	42.4	13.2	109	358	374
S	43.0	12.1	113	343	358
Current FKI Average:	43.2	12.9	112	330	371
Cumulative FKI Average:	43.0	12.7	111	335	372
FKI Index, %	100.5	101.6	100.9	98.5	99.7

Figure 1



COMPARISON OF BASIS WEIGHT RESULTS
(Period Nov. 1 - Nov. 30, 1957)

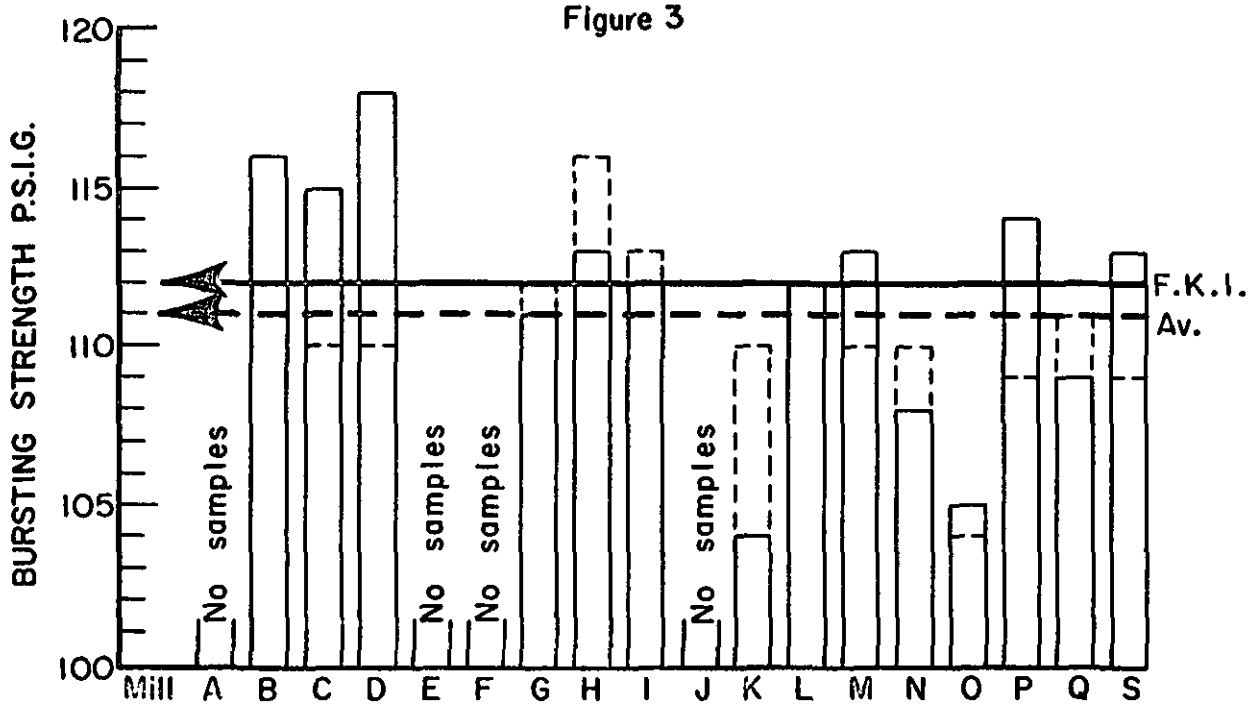
Figure 2



COMPARISON OF CALIPER RESULTS
(Period Nov. 1 - Nov. 30, 1957)

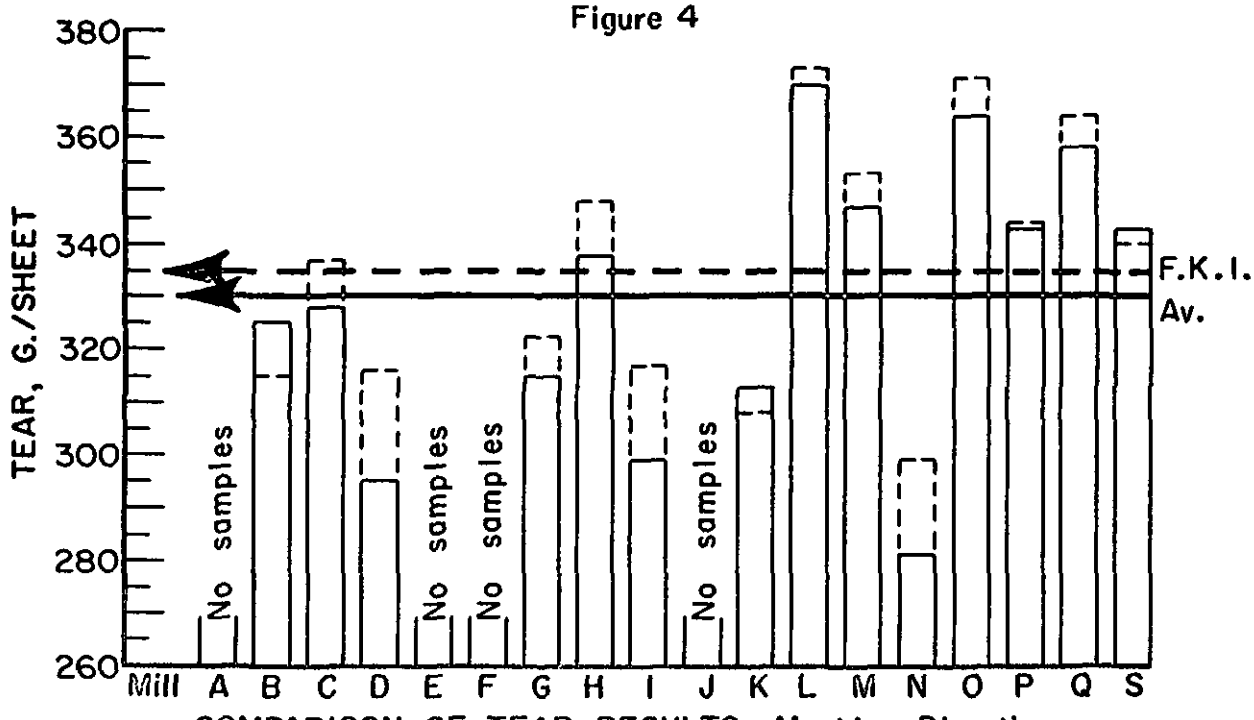
——— Current mill average
- - - - - - Cumulative mill average

Figure 3



COMPARISON OF BURSTING STRENGTH RESULTS
(Period Nov. 1 - Nov. 30, 1957)

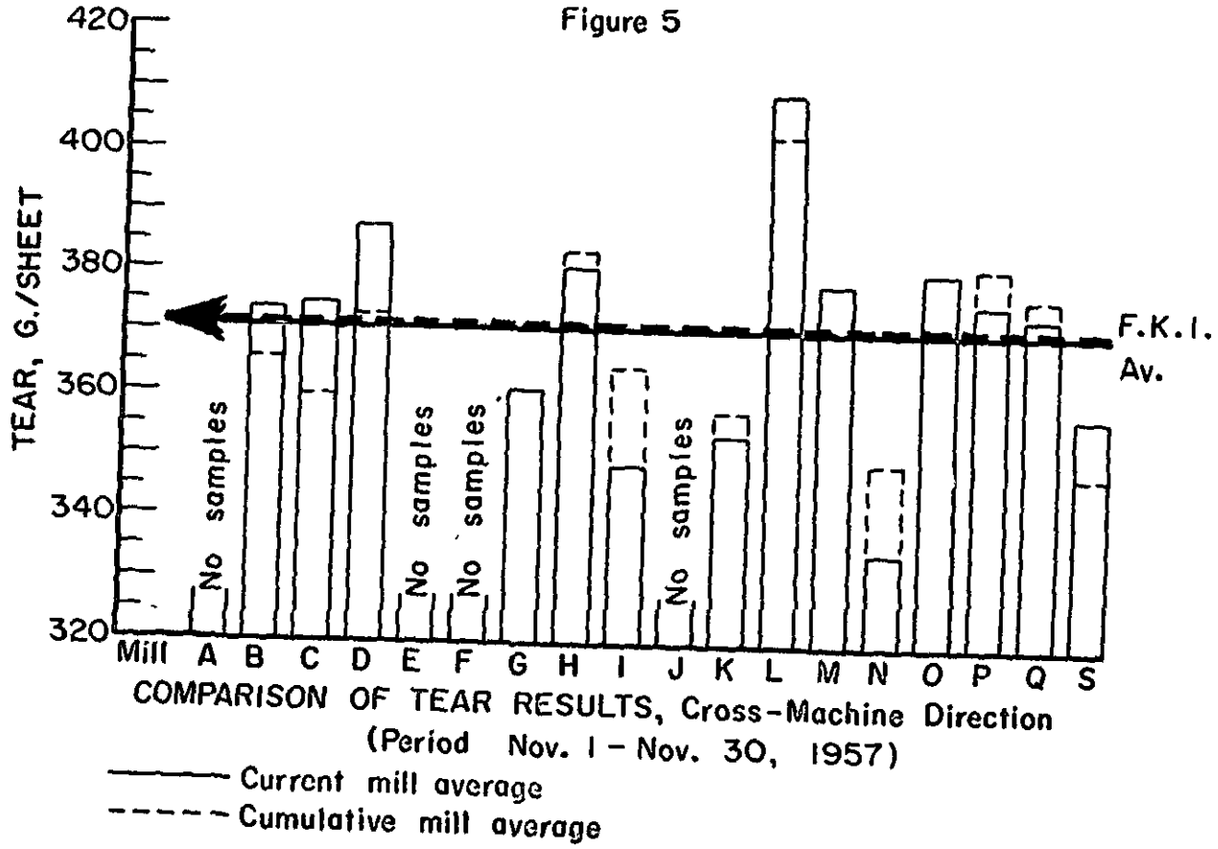
Figure 4



COMPARISON OF TEAR RESULTS, Machine Direction
(Period Nov. 1 - Nov. 30, 1957)

——— Current mill average
- - - - - Cumulative mill average

Figure 5



COMPARISON OF TEAR RESULTS, Cross-Machine Direction
(Period Nov. 1 – Nov. 30, 1957)

——— Current mill average
– – – – Cumulative mill average

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957

TABLE III

MILL A -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
No samples submitted.																			

TABLE IV

MILL B -- 42-LB. LINERBOARD

175835	W F	11/ 1/57	10/21/57	2	44.0	43.0	43.6	13.0	12.0	12.6	128	91	112	368	288	323[a]	416	344	369[a]
175893	W.F	11/11/57	10/29/57	1	43.8	42.4	43.2	12.8	11.8	12.2	143	105	119	344	256	303[a]	424	336	366[a]
175894	W.F	11/11/57	10/31/57	2	43.6	41.6	42.7	13.0	12.1	12.6	136	98	115	368	272	313	400	312	367[a]
175929	W F	11/14/57	11/ 9/57	2	44.0	43.8	44.0	13.0	12.0	12.5	133	96	118	400	312	347	440	328	365[a]
176002	W F.	11/21/57	11/16/57	2	45.0	42.4	44.2	13.5	11.9	12.9	134	95	115	384	304	340[a]	432	368	402[a]
Current Mill Average							43.5			12.6			116			325			374
Cumulative Mill Average.							43.5			12.6			112			315			366
Mill Factor, %							100.0			100.0			103.6			103.2			102.2
Mill Index, %							101.2			99.2			104.5			97.0			100.5

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE V

MILL C -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
175915	WFIS	11/13/57	10/29/57	2	44.8	43.0	43.8	14.3	13.3	13.8	147	100	120	360	288	323[a]	392	328	361[a]
175914	WFIS	11/13/57	10/31/57	2	44.8	43.2	44.0	14.4	13.0	13.9	126	92	109	384	288	334[a]	432	320	389[a]
Current Mill Average.							43.9			13.8			115			328			375
Cumulative Mill Average:							42.5			13.5			110			337			360
Mill Factor, %							103.3			102.2			104.5			97.3			104.2
Mill Index, %							102.1			108.7			103.6			97.9			100.8

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE VI

MILL D -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
175968	WF1S	11/18/57	11/ 2/57	1	43.2	42.0	42.6	13.1	12.2	12.6	136	100	118	352	264	303[a]	416	368	381[a]
176028	WF1S	11/25/57	11/16/57	1	43.6	42.0	43.2	13.4	12.3	12.9	133	100	118	344	232	290	440	352	400[a]
176029	WF1S	11/25/57	11/18/57	1	43.4	41.6	42.4	13.5	12.0	12.7	135	97	116	352	256	293	400	360	381[a]
Current Mill Average							42.7			12.7			118			295			388
Cumulative Mill Average.							42.9			12.5			110			316			373
Mill Factor, %							99.5			101.6			107.3			93.4			104.0
Mill Index, %							99.3			100.0			106.3			88.1			104.3

TABLE VII

MILL E -- 42-LB. LINERBOARD

No samples submitted.

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE VIII

MILL F -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.

No samples submitted.

TABLE IX

MILL G -- 42-LB. LINERBOARD

175836	WFIS	11/4/57	10/27/57	1	44.0	42.0	43.4	14.0	13.0	13.5	135	86	111	376	264	318[a]	384	328	365[a]
175837	WFIS	11/4/57	10/27/57	1	44.0	42.0	43.0	14.0	13.0	13.5	135	89	112	368	256	313	384	320	357[a]
Current Mill Average:							43.2			13.5			111			315			361
Cumulative Mill Average.							42.9			13.3			112			322			361
Mill Factor, %							100.7			101.5			99.1			97.8			100.0
Mill Index, %							100.5			106.3			100.0			94.0			97.0

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE X

MILL H -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
175838	W.F	11/ 4/57	10/16/57	-	44.6	42.0	43.3	13.5	12.1	12.6	134	92	109	352	272	316	400	336	364[a]
175839	W.F.	11/ 4/57	10/26/57	-	44.4	43.0	43.7	13.0	12.4	12.8	127	96	113	368	264	315[a]	408	336	369[a]
175840	W.F.	11/ 4/57	10/29/57	-	45.0	43.0	44.2	11.9	11.0	11.5	130	100	114	384	296	341[a]	392	328	362[a]
175877	W.F.	11/ 7/57	11/ 1/57	-	44.4	43.6	44.0	13.2	12.2	12.8	132	88	109	400	296	339[a]	448	344	380[a]
175878	W.F.	11/ 7/57	11/ 1/57	-	44.4	42.4	43.8	13.1	12.0	12.7	130	84	110	384	304	340	448	352	406[a]
175994	W.F.	11/20/57	11/14/57	-	44.2	42.0	43.0	12.9	11.5	12.5	126	100	114	368	232	328[a]	416	352	377[a]
175995	W.F.	11/20/57	11/14/57	-	46.6	44.2	45.4	13.3	12.1	12.9	142	96	117	416	344	369[a]	536	384	424[a]
175996	W.F.	11/20/57	11/18/57	-	45.0	43.8	44.3	13.9	12.8	13.3	134	83	112	416	304	361[a]	432	336	383[a]
175997	W.F.	11/20/57	11/18/57	-	44.4	42.0	43.7	13.5	12.1	13.0	136	91	118	400	296	331[a]	416	336	363[a]
Current Mill Average:							43.9			12.7			113			338			381
Cumulative Mill Average:							43.6			12.7			116			348			384
Mill Factor, %							100.7			100.0			97.4			97.1			99.2
Mill Index, %							102.1			100.0			101.8			100.9			102.4

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE XI

MILL I -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
175833	W.F.	11/ 1/57	10/17/57	2	43.6	42.0	42.8	13.9	12.3	12.9	138	85	108	336	256	307	360	288	325[a]
175834	W.F.	11/ 1/57	10/19/57	2	43.8	42.0	42.6	13.3	11.8	12.5	130	89	110	360	272	309	376	320	337[a]
175843	W.F.	11/ 4/57	10/21/57	2	45.0	43.8	44.2	13.3	11.9	12.7	142	94	117	344	264	295[a]	408	328	370[a]
175844	W.F.	11/ 4/57	10/22/57	2	43.0	41.0	42.0	13.3	12.0	12.7	139	82	113	352	264	293	400	328	351[a]
175903	W F	11/12/57	10/23/57	2	43.6	41.6	42.4	13.3	12.2	12.7	130	94	111	336	264	301[a]	384	320	356[a]
175904	W.F	11/12/57	10/25/57	2	43.2	42.0	42.3	12.6	12.0	12.3	129	87	109	368	248	299	368	288	337[a]
175898	W.F	11/11/57	11/ 2/57	2	44.4	43.0	44.0	13.2	12.1	12.9	146	92	119	376	240	307[a]	408	328	367[a]
175899	W F	11/11/57	11/ 2/57	2	42.2	41.6	42.0	12.9	11.6	12.4	143	90	112	320	232	280	376	320	351[a]
Current Mill Average							42.8			12.6			112			299			349
Cumulative Mill Average							42.6			12.4			113			317			365
Mill Factor, %							100.5			101.6			99.1			94.3			95.6
Mill Index, %							99.5			99.2			100.9			89.3			93.8

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE XII

MILL J -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
No samples submitted.																			

TABLE XIII

MILL K -- 42-LB. LINERBOARD

175984	WF1S	11/19/57	11/11/57	1	43.0	40.6	41.9	14.3	11.7	12.9	140	78	104	400	240	307	384	320	340[a]
175985	WF1S	11/19/57	11/12/57	1	43.8	42.0	42.8	13.6	12.6	13.0	136	78	105	368	272	318	400	336	368[a]
Current Mill Average							42.3			13.0			104			313			354
Cumulative Mill Average							42.7			12.6			110			308			358
Mill Factor, %							99.1			103.2			94.5			101.6			98.9
Mill Index, %							98.4			102.4			93.7			93.4			95.2

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE XIV

MILL L -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
175830	W B	11/ 1/57	10/15/57	-	44.8	42.2	43.6	12.3	11.6	12.0	135	85	114	408	328	359[a]	440	376	401[a]
175831	W B	11/ 1/57	10/16/57	-	44.8	41.8	42.8	12.1	11.2	11.6	139	100	118	448	328	357[a]	432	352	409[a]
175832	W.B	11/ 1/57	10/16/57	-	45.0	42.0	43.4	12.1	11.0	11.7	133	97	117	392	320	345[a]	456	384	407[a]
175895	W B	11/11/57	10/27/57	-	45.0	42.0	43.4	13.0	12.0	12.4	140	75	112	368	320	344[a]	432	360	394[a]
175865	W.B	11/ 5/57	10/27/57	-	45.0	41.6	43.6	12.8	11.8	12.4	126	83	106	416	320	365[a]	464	368	412[a]
175866	W B.	11/ 5/57	10/28/57	-	45.6	42.2	43.6	12.5	11.5	12.1	128	86	107	400	296	358[a]	464	352	412[a]
175896	W B.	11/11/57	10/30/57	-	44.8	42.4	43.5	12.4	11.3	11.9	121	89	106	440	304	377[a]	464	344	410[a]
175897	W B.	11/11/57	10/31/57	-	44.8	42.2	43.5	12.4	11.2	12.0	137	82	113	416	320	370[a]	464	360	407[a]
175907	W B.	11/12/57	11/ 1/57	-	45.8	42.2	43.8	12.4	11.3	11.9	127	90	112	416	320	374[a]	472	352	395[a]
175908	W.B.	11/12/57	11/ 1/57	-	44.2	41.8	43.0	12.3	11.3	11.8	131	89	114	432	368	407[a]	432	368	401[a]
175971	W.B.	11/18/57	11/ 5/57	-	45.6	42.4	44.3	13.0	11.3	12.5	135	95	114	472	328	385[a]	472	384	415[a]
176055	W.B.	11/26/57	11/15/57	-	44.6	42.0	43.4	13.0	11.5	12.6	143	87	116	416	320	370[a]	504	368	437[a]
176056	W.B.	11/26/57	11/15/57	-	45.6	42.6	44.1	13.2	11.3	12.6	133	81	111	496	312	393[a]	496	376	431[a]
Current Mill Average							43.6			12.1			112			370			410
Cumulative Mill Average:							43.5			12.1			112			373			403
Mill Factor, %							100.2			100.0			100.0			99.2			101.7
Mill Index, %							101.4			95.3			100.9			110.4			110.2

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE XV

MILL M -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
175911	W.F.	11/13/57	11/ 6/57	-	46.0	43.8	44.9	13.2	12.1	12.8	135	91	116	424	328	381[a]	464	336	391[a]
175912	W.F.	11/13/57	11/ 7/57	-	42.4	42.0	42.1	13.1	12.1	12.8	128	90	117	400	280	337[a]	432	336	385[a]
175913	W.F.	11/13/57	11/ 8/57	-	42.2	41.6	42.0	13.0	12.0	12.5	121	84	105	376	320	341[a]	400	320	359[a]
176023	W.F.	11/25/57	11/13/57	-	44.0	42.0	43.2	13.3	12.7	13.1	133	87	110	400	320	358[a]	400	352	375[a]
176024	W.F.	11/25/57	11/14/57	-	45.6	44.2	44.8	13.3	12.4	13.0	128	85	117	360	280	321[a]	416	344	385[a]
176025	W.F.	11/25/57	11/15/57	-	43.8	42.6	43.4	12.8	11.8	12.2	126	80	112	416	296	345[a]	408	344	379[a]
Current Mill Average							43.4			12.7			113			347			379
Cumulative Mill Average							43.7			12.8			110			353			379
Mill Factor, %							99.3			99.2			102.7			98.3			100.0
Mill Index, %							100.9			100.0			101.8			103.6			101.9

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE XVI

MILL N -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
175841	W.F.	11/ 4/57	10/28/57	1	43.8	41.6	43.0	12.9	11.9	12.4	118	80	103	368	256	289	384	288	337[a]
175842	W.F.	11/ 4/57	10/29/57	1	44.2	42.0	43.3	13.5	12.3	13.0	135	91	111	312	280	296	368	320	349[a]
175863	W.F.	11/ 5/57	10/30/57	1	43.8	42.0	43.0	13.7	12.5	13.1	121	75	104	320	248	285	376	280	325[a]
175864	W.F.	11/ 5/57	10/31/57	1	44.0	42.2	43.0	13.9	12.4	13.0	138	80	109	304	240	269[a]	384	280	321[a]
176017	W.F.	11/22/57	11/ 1/57	1	43.2	41.6	42.6	13.5	12.4	12.9	132	97	111	304	216	262[a]	368	296	335[a]
176018	W.F.	11/22/57	11/ 2/57	1	44.0	41.6	42.8	13.4	12.5	12.9	134	86	109	328	256	289[a]	368	320	340[a]
176026	W.F.	11/25/57	11/ 4/57	1	44.0	42.0	43.2	13.5	12.8	13.1	129	74	107	304	248	277	360	280	331[a]
176027	W.F.	11/25/57	11/ 7/57	1	43.8	42.0	42.8	14.0	12.5	13.1	124	85	107	328	248	282	360	312	339[a]
Current Mill Average.							43.0			12.9			108			281			335
Cumulative Mill Average:							43.5			12.8			110			299			350
Mill Factor, %							98.9			100.8			98.2			94.0			95.7
Mill Index, %							100.0			101.6			97.3			83.9			90.1

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE XVII

MILL O -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
1-5976	S F	11/ 7/57	10/29/57	7	45.0	41.0	43.2	13.9	12.9	13.4	122	75	101	456	304	371[a]	440	320	381[a]
1-5990	S F	11/14/57	11/ 6/57	7	46.0	43.4	44.5	15.0	13.2	13.9	134	83	108	408	336	367[a]	452	360	392[a]
1-5993	S F	11/20/57	11/12/57	7	43.6	41.0	42.3	13.6	12.8	12.9	122	80	105	416	304	355[a]	448	320	369[a]
Current Mill Average							43.4			13.4			105			364			381
Cumulative Mill Average							43.4			13.0			104			371			381
Mill Factor, %							100.0			103.1			101.0			98.1			100.0
Mill Index, %							100.9			105.5			94.6			108.7			102.4

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE XVIII

MILL P -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
175905	W.F.	11/12/57	10/28/57	2	44.0	43.0	43.8	13.1	12.5	12.9	134	81	110	368	280	328	408	336	376[a]
175906	W.F.	11/12/57	10/29/57	2	44.0	43.0	43.7	13.0	12.5	12.6	138	79	112	400	288	347[a]	392	344	367[a]
175964	W.F.	11/18/57	11/ 3/57	2	44.0	42.4	43.0	13.0	12.1	12.5	137	98	117	384	328	350[a]	400	344	373[a]
175965	W.F.	11/18/57	11/ 3/57	2	43.6	42.0	43.0	13.0	12.1	12.5	131	92	116	408	312	345[a]	432	360	389[a]
Current Mill Average:							43.4			12.6			114			343			376
Cumulative Mill Average							43.1			12.5			109			344			382
Mill Factor, %							100.7			100.8			104.6			99.7			98.4
Mill Index, %							100.9			99.2			102.7			102.4			101.1

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE XIX

MILL Q -- 42-LB. LINERBOARD

File No	Finish	Date Recd	Date Made	Mch. No	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
175969	W	11/18/57	10/30/57	4	43.6	40.6	42.2	13.7	12.6	13.1	129	87	112	464	320	376[a]	480	304	387[a]
175970	W.	11/18/57	11/ 1/57	4	43.8	40.8	42.6	14.0	12.7	13.2	118	90	105	376	296	340[a]	392	336	361[a]
Current Mill Average							42.4			13.2			109			358			374
Cumulative Mill Average							42.9			13.2			111			364			377
Mill Factor, %							98.8			100.0			98.2			98.4			99.2
Mill Index, %							98.6			103.9			98.2			106.9			100.5

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE XX

MILL S -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
175874	W.F.	11/ 6/57	10/21/57	-	44.2	42.2	43.2	12.9	11.4	12.2	139	92	109	440	296	359[a]	392	312	357[a]
175875	W.F.	11/ 6/57	10/21/57	-	44.2	42.4	43.7	12.8	11.5	12.2	128	95	114	368	304	343[a]	408	336	366[a]
175909	W.F.	11/12/57	10/28/57	-	44.4	42.2	43.5	13.2	11.9	12.3	134	95	114	384	312	355[a]	400	352	375[a]
175910	W.F.	11/12/57	10/28/57	-	43.2	40.8	42.1	12.3	11.6	12.0	127	95	113	368	328	349[a]	400	352	378[a]
175966	W.F.	11/18/57	11/ 5/57	-	43.4	42.0	42.5	12.1	11.5	11.8	140	102	116	360	264	323	368	304	335[a]
175967	W.F.	11/18/57	11/ 5/57	-	43.8	42.0	42.7	12.1	11.3	11.8	140	96	115	368	272	331	416	312	346[a]
176000	W.F.	11/21/57	11/11/57	-	43.6	42.0	42.6	12.8	12.0	12.2	130	92	111	368	304	340	384	312	345[a]
176001	W.F.	11/21/57	11/11/57	-	44.0	43.2	43.8	12.7	11.9	12.2	129	82	113	400	312	347[a]	384	336	360[a]
Current Mill Average							43.0			12.1			113			343			358
Cumulative Mill Average							42.9			12.3			109			340			348
Mill Factor, %							100.2			98.4			103.7			100.9			102.9
Mill Index, %							100.0			95.3			101.8			102.4			96.2

TABLE XXI

MILL R -- 47-LB. DRUM LINERBOARD

No samples submitted.

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

As a supplementary part of the Continuous Baseline Study, comparisons of the mill test results with those obtained at The Institute of Paper Chemistry on corresponding samples have been included in this report. As may be noted in Table XXII, the atmospheric conditions used prior to and during the testing period were relatively uniform for the mills which reported this information. However, the conditioning periods varied considerably.

TABLE XXII

Mill Code	Preconditioning R.H., %	Temp., °F.	Time, hr.	Conditioning R.H., %	Temp., °F.	Time, hr.
A		No samples submitted.				
B		None		50-53	73	24
C	50	78	24		None	
D		None		50-59	68-69	--
E		No samples submitted.				
F		No samples submitted.				
G		None		44-56	85-90	--
H	34	--	48	50	73	24-48
I	50	73	24	50	73	24
J		No samples submitted.				
K	59-65	65-68	24-48	65-73	65-74	2
L	49.5	72	48	46-50	59-72	48
M	36	78	8	51-53	73	16
N	35-56	74-80	0.5	50-53	70-73	24-72
O	50	73	24	50	73	--
P		None		50	73	24
Q		None		52	72	--
S		None		50	73	0.5

A summary of the Institute and mill test results for the current period is shown in Table XXIII, and a comparison of differences between Institute and mill test results is given in Table XXIV for the

current period and the two previous periods. The comparisons are given in Tables XXV to XLII, for the 42-lb. liner samples. A comparison of the special drum stock is given in Table XLIII. In all the comparisons given in Tables XXV to XLIII, the Institute's test values have been used as the reference line.

A comparison of the test data in Tables XXIII and XXIV reveals the level of agreement between mill and Institute data for basis weight, caliper, bursting strength, and Elmendorf tear. Table XXIII shows the average difference between Institute and mill test results for all sample lots submitted by each mill for the current period. In addition, the maximum difference encountered in comparing the Institute and mill test results for a given sample lot is shown. In Table XXIV, the average differences shown for each test in Table XXIII have been calculated on a percentage basis for each mill. In addition, for purposes of comparison, the average percentage differences for the preceding two periods are shown.

It may be noted in Table XXIV that the maximum variation between the average basis weight results of the Institute and those of a given mill on corresponding samples is three per cent for the current period. By comparison, the maximum percentage variation noted for the previous two periods was also three per cent. Further, it may be noted that the average basis weight results for Mills C, H, I, M, and P are higher than those for the Institute, the average result for Mill O is the same and the average results for the other mills are lower. None of the variations for the current period appear to be excessive.

The maximum variation in caliper for the current period is six per cent. This variation is the same as the maximum variation for the previous two periods. Compared with the Institute's test results, the test results for all mills are lower. The variation for Mill K may be excessive.

It may be noted in Table XXIV that the bursting strength results exhibited a maximum variation of eight per cent for the current period. The average results for Mills I, L, and O are higher than those for the Institute, the average results for Mills M and N are the same, and the results for the other mills are lower. Only the variation for Mills D appears to be excessive.

It may be seen in Tables XXIII and XXIV that the average machine direction tear results for Mills C, D, I, K, N, and P are higher than those for the Institute, and the results for the other mills are lower. The maximum variation for the current period is nineteen per cent. For the current period only the variation of nineteen per cent noted for Mill D appears to be excessive.

With regard to the cross-machine direction tear results, it may be noted that the average results for Mills B, C, D, G, I, K, L, M, N, O, P, and S are higher than those for the Institute, and the average results for the other mills are lower. The maximum variation for the current period is twenty per cent. The variations associated with the results for Mills K, P, and S appear to be excessive.

TABLE XXIII

SUMMARY OF TEST RESULT COMPARISONS (Average Mill and Institute Results)

Mills*	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	S
No. Samples Compared	0	5	2	3	0	0	2	9	8	0	2	13	6	8	3	4	2	8
Basis Weight																		
Institute		43.5	43.9	42.7			43.2	43.9	42.8		42.3	43.6	43.4	43.0	43.4	43.4	42.4	43.0
Mill		42.9	45.0	42.4			42.2	44.0	43.0		42.1	43.2	43.6	42.7	43.4	43.5	42.1	42.8
Av. Diff.**		-0.6	+1.1	-0.3			-1.0	+0.1	+0.2		-0.2	-0.4	+0.2	-0.3	0.0	+0.1	-0.3	-0.2
Max. Diff.***		-0.9	+1.2	-0.7			-1.3	+0.7	+0.4		-0.6	-0.9	+0.9	-0.9	+0.5	+0.5	-0.4	-0.6
Caliper																		
Institute		12.6	13.8	12.7			13.5	12.7	12.6		13.0	12.1	12.7	12.9	13.4	12.6	13.2	12.1
Mill		12.4	13.3	12.6			12.9	12.5	12.3		12.2	11.7	12.4	12.7	12.9	12.5	12.8	11.9
Av. Diff.**		-0.2	-0.5	-0.1			-0.6	-0.2	-0.3		-0.8	-0.4	-0.3	-0.2	-0.5	-0.1	-0.4	-0.2
Max. Diff.***		-0.3	-0.7	-0.3			-0.6	-0.3	-0.6		-0.7	-0.7	-0.7	-0.4	-0.8	-0.3	-0.4	-0.6
Bursting Strength																		
Institute		116	115	118			111	113	112		104	112	113	108	105	114	109	113
Mill		113	112	109			110	112	113		101	115	113	108	106	113	106	111
Av. Diff.**		-3	-3	-9			-1	-1	+1		-3	+3	0	0	+1	-1	-3	-2
Max. Diff.***		-9	-3	-10			-2	-6	+4		-4	+9	+7	-4	-3	-2	-5	-8
Tearing Strength, in																		
Institute		325	328	295			315	338	299		313	370	347	281	364	343	358	343
Mill		321	347	352			314	326	305		326	366	343	296	357	375	352	364
Av. Diff.**		-4	+19	+57			-1	-12	+6		+13	-4	-4	+15	-7	+32	-6	-21
Max. Diff.***		-23	+37	+70			-7	-41	+32		+58	-38	-23	+44	-23	+46	-13	+ 43
Tearing Strength, across																		
Institute		374	375	388			361	381	349		354	410	379	335	381	376	374	358
Mill		391	398	423			391	376	356		393	421	382	349	396	450	369	397
Av. Diff.**		+17	+23	+35			+30	-5	+7		+39	+11	+3	+14	+15	+74	-5	+39
Max. Diff.***		+44	+25	+58			+34	-31	+34		+76	+47	+17	+40	+43	+87	-12	+50

* Comparison based on averages involved only those samples on which mill test data were submitted.
** Average difference is the difference between the Institute mill average and the mill average based on mill test data.
*** Maximum difference encountered in comparing the Institute average and the mill average for any sample submitted by that particular mill.

TABLE XXIV

COMPARISON OF INSTITUTE-MILL DIFFERENCES BY PERIODS
Average Differences, per cent

Mill	Period	Basis Weight	Caliper	Burst	Tear, in.	Tear, across
	Current	--	--	--	--	--
	124th	--	--	--	--	--
	123rd	--	---	--	--	--
	Current	-1	-2	-3	-1	+5
	124th	-1	-2	0	+2	+4
	123rd	-2	0	-3	+3	+6
	Current	+3	-4	-3	+6	+6
	124th	+3	-3	-7	-8	+9
	123rd	+3	-6	-5	+4	+10
D	Current	-0.7	-0.8	-8	+19	+9
	124th	-2	-2	+0.9	+8	+5
	123rd	-2	-0.8	-0.9	+8	+8
E	Current	--	--	--	--	--
	124th	-1	-2	-5	-4	0
	123rd	-1	-3	-4	-5	-3
F	Current	--	--	--	--	--
	124th	--	--	--	--	--
	123rd	+0.5	-4	-5	+2	+13
G	Current	-2	-4	-0.9	-0.3	+8
	124th	--	--	--	--	--
	123rd	-2	-3	-5	+13	+18
H	Current	+0.2	-2	-0.9	-4	-1
	124th	+2	+0.8	-0.9	-6	-0.5
	123rd	-0.5	-2	-4	-11	-4
I	Current	+0.5	-2	+0.9	+2	+2
	124th	+1	-2	+0.9	+5	+2
	123rd	+0.7	-2	-3	+1	-1
J	Current	--	--	--	--	--
	124th	--	--	--	--	--
	123rd	--	--	--	--	--
K	Current	-0.5	-6	-3	+4	+11
	124th	0	-3	-7	-8	+ 6
	123rd	0	-3	-9	-3	+ 4
L	Current	-0.9	-3	+3	-1	+ 3
	124th	-0.7	-3	+0.9	-3	- 1
	123rd	-0.5	-5	0	-3	+ 1
M	Current	+0.5	-2	0	-1	+0.8
	124th	+0.5	-4	0	-3	+2
	123rd	-0.7	-0.8	-3	-3	-0.5
N	Current	-0.7	-2	0	+5	+4
	124th	--	--	--	--	--
	123rd	-0.5	+0.8	-2	+4	+4
O	Current	0	-4	+1	-2	+4
	124th	-0.5	-3	+6	-7	+2
	123rd	+0.7	-2	+1	-2	+8
P	Current	+0.2	-0.8	-0.9	+9	+20
	124th	+0.7	-4	+4	+9	+9
	123rd	0	-2	+0.9	+9	+17
Q	Current	-0.7	-3	-3	-2	-1
	124th	-1	-4	-3	-2	-0.8
	123rd	-2	-6	-3	+0.3	-0.5
S	Current	-0.5	-2	-2	-6	+11
	124th	-0.7	-2	0	0	+7
	123rd	-0.5	-0.8	-0.9	+4	+8

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957

TABLE XXV

MILL A -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
No samples submitted																		

TABLE XXVI

MILL B -- 42-LB. LINERBOARD

175835	W.F	10/21/57	2	43.6	42.7	-0.9	12.6	12.4	-0.2	112	115	+3	323[a]	332	+ 9	369[a]	413	+44
175893	W.F.	10/29/57	1	43.2	42.4	-0.8	12.2	12.2	0.0	119	110	-9	303[a]	312	+ 9	366[a]	378	+12
175894	W.F.	10/31/57	2	42.7	42.2	-0.5	12.6	12.4	-0.2	115	111	-4	313	311	- 2	367[a]	377	+10
175929	W.F.	11/ 9/57	2	44.0	43.4	-0.6	12.5	12.6	+0.1	118	114	-4	347	324	-23	365[a]	393	+28
176002	W.F.	11/16/57	2	44.2	43.5	-0.7	12.9	12.6	-0.3	115	117	+2	340[a]	326	-14	402[a]	391	-11
Current Mill Average.				43.5	42.9	-0.6	12.6	12.4	-0.2	116	113	-3	325	321	- 4	374	391	+17

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE XXVII

MILL C -- 42-LB LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
175915	WF1S	10/29/57	2	43.8	45.0	+1.2	13.8	13.4	-0.4	120	118	- 2	323[a]	360	+37	361[a]	386	+25
175914	WF1S	10/31/57	2	44.0	45.0	+1.0	13.9	13.2	-0.7	109	106	- 3	334[a]	334	0	389[a]	409	+20
Current Mill Average:				43.9	45.0	+1.1	13.8	13.3	-0.5	115	112	- 3	328	347	+19	375	398	+23

TABLE XXVIII

MILL D -- 42-LB. LINERBOARD

175968	WF1S	11/ 2/57	1	42.6	42.2	-0.4	12.6	12.5	-0.1	118	110	- 8	303[a]	337	+34	381[a]	400	+19
176028	WF1S	11/16/57	1	43.2	42.5	-0.7	12.9	12.6	-0.3	118	108	-10	290	358	+68	400[a]	431	+31
176029	WF1S	11/18/57	1	42.4	42.6	+0.2	12.7	12.8	+0.1	116	108	- 8	293	363	+70	381[a]	439	+58
Current Mill Average:				42.7	42.4	-0.3	12.7	12.6	-0.1	118	109	- 9	295	352	+57	388	423	+35

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note. All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE XXIX

MILL E -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
No samples submitted																		

TABLE XXX

MILL F -- 42-LB. LINERBOARD

No samples submitted

TABLE XXXI

MILL G -- 42-LB. LINERBOARD

175836	WF1S	10/27/57	1	43.4	42.1	-1.3	13.5	12.9	-0.6	111	110	-1	318[a]	311	-7	365[a]	390	+25
175837	WF1S	10/27/57	1	43.0	42.2	-0.8	13.5	12.9	-0.6	112	110	-2	313	317	+4	357[a]	391	+34
Current Mill Average				43.2	42.2	-1.0	13.5	12.9	-0.6	111	110	-1	315	314	-1	361	391	+30

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE XXXII

MILL H -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
175838	A F.	10/16/57	-	43.3	44.0	+0.7	12.6	12.5	-0.1	109	114	+5	316	291	-25	364[a]	356	- 8
175839	A F	10/26/57	-	43.7	43.8	+0.1	12.8	12.7	-0.1	113	113	0	315[a]	323	+ 8	369[a]	360	- 9
175840	A.F.	10/29/57	-	44.2	44.5	+0.3	11.5	11.5	0.0	114	110	-4	341[a]	317	-24	362[a]	364	+ 2
175877	W.F.	11/ 1/57	-	44.0	43.7	-0.3	12.8	12.6	-0.2	109	109	0	339[a]	344	+ 5	380[a]	393	+13
175878	W F.	11/ 1/57	-	43.8	44.2	+0.4	12.7	12.5	-0.2	110	107	-3	340	357	+17	406[a]	416	+10
175994	W F.	11/14/57	-	43.0	43.4	+0.4	12.5	12.2	-0.3	114	117	+3	328[a]	323	- 5	377[a]	377	0
175995	W.F.	11/14/57	-	45.4	45.1	-0.3	12.9	12.6	-0.3	117	116	-1	369[a]	329	-40	424[a]	393	-31
175996	W.F.	11/18/57	-	44.3	44.1	-0.2	13.3	13.2	-0.1	112	108	-4	361[a]	320	-41	383[a]	364	-19
175997	W.F.	11/18/57	-	43.7	43.4	-0.3	13.0	12.8	-0.2	118	112	-6	331[a]	328	- 3	363[a]	364	+ 1
Current Mill Average.				43.9	44.0	+0.1	12.7	12.5	-0.2	113	112	-1	338	326	-12	381	376	- 5

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE XXXIII

MILL I -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff	IPC	Mill	Diff	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
175833	W.F.	10/17/57	2	42.8	43.1	+0.3	12.9	12.4	-0.5	108	112	+4	307	293	-14	325[a]	359	+34
175834	W.F.	10/19/57	2	42.6	43.0	+0.4	12.5	12.3	-0.2	110	110	0	309	303	- 6	337[a]	344	+ 7
175843	W.F	10/21/57	2	44.2	44.3	+0.1	12.7	12.4	-0.3	117	119	+2	295[a]	327	+32	370[a]	373	+ 3
175844	W.F.	10/22/57	2	42.0	42.1	+0.1	12.7	12.1	-0.6	113	113	0	293	312	+19	351[a]	349	- 2
175903	W.F	10/23/57	2	42.4	42.6	+0.2	12.7	12.4	-0.3	111	111	0	301[a]	309	+ 8	356[a]	351	- 5
175904	W.F.	10/25/57	2	42.3	42.4	+0.1	12.3	12.3	0.0	109	111	+2	299	301	+ 2	337[a]	364	+27
175898	W.F.	11/ 2/57	2	44.0	44.2	+0.2	12.9	12.3	-0.6	119	117	-2	307[a]	301	- 6	367[a]	360	- 7
175899	W.F	11/ 2/57	2	42.0	42.2	+0.2	12.4	12.0	-0.4	112	112	0	280	297	+17	351[a]	346	- 5
Current Mill Average				42.8	43.0	+0.2	12.6	12.3	-0.3	112	113	+1	299	305	+ 6	349	356	+ 7

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note. All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE XXXIV

MILL J -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
No samples submitted																		

TABLE XXXV

MILL K -- 42-LB. LINERBOARD

175984	WFIS	11/11/57	1	41.9	42.0	+0.1	12.9	12.2	-0.7	104	100	-4	307	276	-31	340[a]	341	+ 1
175985	WFIS	11/12/57	1	42.8	42.2	-0.6	13.0	12.3	-0.7	105	102	-3	318	376	+58	368[a]	444	+76
Current Mill Average.				42.3	42.1	-0.2	13.0	12.2	-0.8	104	101	-3	313	326	+13	354	393	+39

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE XXXVI

MILL L -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
175830	w B	10/15/57	-	43.6	42.7	-0.9	12.0	11.5	-0.5	114	118	+4	359[a]	353	- 6	401[a]	403	+ 2
175831	.B.	10/16/57	-	42.8	42.8	0.0	11.6	11.3	-0.3	118	124	+6	357[a]	343	-14	409[a]	425	+16
175832	w.B.	10/16/57	-	43.4	43.1	-0.3	11.7	11.5	-0.2	117	122	+5	345[a]	377	+32	407[a]	441	+34
175895	B.	10/27/57	-	43.4	43.6	+0.2	12.4	12.3	-0.1	112	117	+5	344[a]	363	+19	394[a]	396	+ 2
175865	.B.	10/27/57	-	43.6	43 0	-0.6	12.4	11.7	-0.7	106	115	+9	365[a]	327	-38	412[a]	389	-23
175866	.B.	10/28/57	-	43.6	43.3	-0.3	12.1	11.7	-0.4	107	113	+6	358[a]	367	+ 9	412[a]	424	+12
175896	.B.	10/30/57	-	43.5	43.6	+0.1	11.9	11.8	-0.1	106	110	+4	377[a]	379	+ 2	410[a]	437	+27
175897	.B.	10/31/57	-	43.5	43.2	-0.3	12.0	11.8	-0.2	113	111	-2	370[a]	381	+11	407[a]	444	+37
175907	B.	11/ 1/57	-	43.8	43.1	-0.7	11.9	11.5	-0.4	112	112	0	374[a]	337	-37	395[a]	377	-18
175908	.B.	11/ 1/57	-	43.0	42.9	-0.1	11.8	11.4	-0.4	114	118	+4	407[a]	379	-28	401[a]	448	+47
175971	B.	11/ 5/57	-	44.3	43.4	-0.9	12.5	12.0	-0.5	114	113	-1	385[a]	376	- 9	415[a]	424	+ 9
176055	B.	11/15/57	-	43.4	43.6	+0.2	12.6	12.1	-0.5	116	112	-4	370[a]	376	+ 6	437[a]	439	+ 2
176056	w B.	11/15/57	-	44.1	43.5	-0.6	12.6	11.9	-0.7	111	109	-2	393[a]	396	+ 3	431[a]	428	- 3
Current Mill Average				43.6	43.2	-0.4	12.1	11.7	-0.4	112	115	+3	370	366	- 4	410	421	+11

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE XXXVII

MILL M -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
175911	W.F.	11/ 6/57	-	44.9	44.1	-0.8	12.8	12.6	-0.2	116	111	-5	381[a]	380	- 1	391[a]	384	- 7
175912	W.F.	11/ 7/57	-	42.1	43.0	+0.9	12.8	12.6	-0.2	117	115	-2	337[a]	348	+11	385[a]	392	+ 7
175913	W.F.	11/ 8/57	-	42.0	41.7	-0.3	12.5	12.3	-0.2	105	112	+7	341[a]	323	-18	359[a]	364	+ 5
176023	W.F.	11/13/57	-	43.2	44.0	+0.8	13.1	12.8	-0.3	110	111	+1	358[a]	335	-23	375[a]	372	- 3
176024	W.F.	11/14/57	-	44.8	45.1	-0.3	13.0	12.3	-0.7	117	122	+5	321[a]	339	+18	385[a]	387	+ 2
176025	W.F.	11/15/57	-	43.4	43.5	+0.1	12.2	12.0	-0.2	112	107	-5	345[a]	333	-12	379[a]	396	+17
Current Mill Average:				43.4	43.6	+0.2	12.7	12.4	-0.3	113	113	0	347	343	- 4	379	382	+ 3

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE XXXVIII

MILL N -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mach No.	Basis Weight, lb.			Caliper, points			Bursting Strength p.s.i. gage			Elmendorf Tear, g./sheet In			Elmendorf Tear, g./sheet Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
175841	W.F.	10/28/57	1	43.0	42.9	-0.1	12.4	12.2	-0.2	103	104	+1	289	263	-26	337[a]	327	-10
175842	W.F.	10/29/57	1	43.3	42.4	-0.9	13.0	12.7	-0.3	111	108	-3	296	297	+1	349[a]	339	-10
175863	W.F.	10/30/57	1	43.0	42.6	-0.4	13.1	12.7	-0.4	104	107	+3	285	297	+12	325[a]	365	+40
175864	W.F.	10/31/57	1	43.0	42.6	-0.4	13.0	12.8	-0.2	109	110	+1	269[a]	300	+31	321[a]	345	+24
176017	W.F.	11/ 1/57	1	42.6	42.3	-0.3	12.9	12.8	-0.1	111	107	-4	262[a]	306	+44	335[a]	343	+ 8
176018	W.F.	11/ 2/57	1	42.8	42.2	-0.6	12.9	12.8	-0.1	109	108	-1	289[a]	304	+15	340[a]	365	+25
176026	W.F.	11/ 4/57	1	43.2	43.2	0.0	13.1	12.9	-0.2	107	108	+1	277	298	+21	331[a]	346	+15
176027	W.F.	11/ 7/57	1	42.8	43.4	+0.6	13.1	13.0	-0.1	107	109	+2	282	307	+25	339[a]	362	+23
Current Mill Average.				43.0	42.7	-0.3	12.9	12.7	-0.2	108	108	0	281	296	+15	335	349	+14

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note. All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE XXIX

MILL O -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
175876	S.F.	10/29/57	7	43.2	43.1	-0.1	13.4	12.9	-0.5	101	103	+2	371[a]	348	-23	381[a]	385	+ 4
175930	S.F.	11/ 6/57	7	44.5	44.2	-0.3	13.9	13.1	-0.8	108	111	+3	367[a]	357	-10	392[a]	391	- 1
175993	S.F.	11/12/57	7	42.3	42.8	+0.5	12.9	12.7	-0.2	105	105	0	355[a]	367	+12	369[a]	412	+43
Current Mill Average:				43.4	43.4	0.0	13.4	12.9	-0.5	105	106	+1	364	357	- 7	381	396	+15

TABLE XL

MILL P -- 42-LB. LINERBOARD

175905	W.F.	10/28/57	2	43.8	43.7	-0.1	12.9	12.7	-0.2	110	110	0	328	374	+46	376[a]	448	+72
175906	W.F.	10/29/57	2	43.7	43.5	-0.2	12.6	12.7	+0.1	112	112	0	347[a]	380	+33	367[a]	441	+74
175964	W.F.	11/ 3/57	2	43.0	43.5	+0.5	12.5	12.3	-0.2	117	115	-2	350[a]	377	+27	373[a]	460	+87
175965	W.F.	11/ 3/57	2	43.0	43.3	+0.3	12.5	12.2	-0.3	116	116	0	345[a]	369	+24	389[a]	450	+61
Current Mill Average:				43.4	43.5	+0.1	12.6	12.5	-0.1	114	113	-1	343	375	+32	376	450	+74

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE XLI

MILL Q -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
175969	W.	10/30/57	4	42.2	41.9	-0.3	13.1	12.7	-0.4	112	107	-5	376[a]	363	-13	387[a]	375	-12
175970	W.	11/ 1/57	4	42.6	42.2	-0.4	13.2	12.8	-0.4	105	105	0	340[a]	341	+ 1	361[a]	362	+ 1
Current Mill Average:				42.4	42.1	-0.3	13.2	12.8	-0.4	109	106	-3	358	352	- 6	374	369	- 5

TABLE XLII

MILL S -- 42-LB. LINERBOARD

175874	W.F.	10/21/57	-	43.2*	43.3	+0.1	12.2	11.9	-0.3	109	111	+2	359[a]	371	+12	357[a]	402	+45
175875	W.F.	10/21/57	-	43.7	43.5	-0.2	12.2	12.1	-0.1	114	110	-4	343[a]	386	+43	366[a]	413	+47
175909	W.F.	10/28/57	-	43.5	43.6	+0.1	12.3	12.1	-0.2	114	112	-2	355[a]	386	+31	375[a]	414	+39
175910	W.F.	10/28/57	-	42.1	42.0	-0.1	12.0	11.4	-0.6	113	109	-4	349[a]	362	+13	378[a]	397	+19
175966	W.F.	11/ 5/57	-	42.5	42.4	-0.1	11.8	11.8	0.0	116	111	-5	323	347	+24	335[a]	377	+42
175967	W.F.	11/ 5/57	-	42.7	42.5	-0.2	11.8	11.7	-0.1	115	107	-8	331	333	+ 2	346[a]	375	+29
176000	W.F.	11/11/57	-	42.6	42.3	-0.3	12.2	11.8	-0.4	111	111	0	340	345	+ 5	345[a]	395	+50
176001	W.F.	11/11/57	-	43.8	43.2	-0.6	12.2	12.0	-0.2	113	113	0	347[a]	385	+38	360[a]	404	+44
Current Mill Average:				43.0	42.8	-0.2	12.1	11.9	-0.2	113	111	-2	343	364	-21	358	397	+39

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1957 (continued)

TABLE XLIII

MILL R -- 47-LB. DRUM LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.

No samples submitted.